

**FINAL REPORT FOR THE SAMPLE RECEIVED IN  
FEBRUARY, 2010 FOR SAF F10-043**

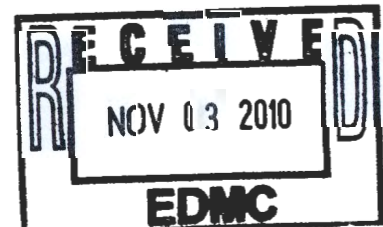
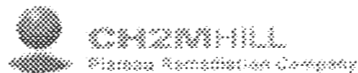
**Document No.: 20100185  
SDG: 222S20100185**

**Gerald P. Ritenour**  
Advanced Technologies and Laboratories International, Inc.

**Date Published**  
March 12, 2010

Prepared for:

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**222-S LABORATORY****FINAL REPORT FOR THE SAMPLE RECEIVED IN FEBRUARY, 2010,  
FOR SAF F10-043****1.0 INTRODUCTION**

This final report presents the result for the one ground water sample taken on February 25, 2010. The sample was analyzed in accordance with Sampling Authorization Form F10-043; 299-E28-30 Characterization Saturated Zone-Groundwater ("M" Well) (SAF) and ATL-MP-1011; *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP). The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Holding Time Report
Attachment 3	Receipt Paperwork
Attachment 4	Issue Resolution Forms

**2.0 SAMPLE RECEIPT AND HANDLING**

The sample was received on February 25, 2010, with adequate paperwork. The measured temperature of the outside of the sample container was 13 °C . This was reported to the client on the laboratory's sample receipt check list (see Attachment 3) and Issue Resolution Form No. 10-050 (see Attachment 4).

**3.0 ANALYTICAL RESULTS SUMMARY**

The Data Summary Report (Attachment 1) present the final analytical results for those analytes requested in the SAF. The "Det Limit" column in Attachment 1 contains the method detection limit (MDL).

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For analysis without a preparation step, this column is left blank.

The "Qual Flags" column in Attachment 1 contains data qualifier flags that are defined as follows:

- "U" indicates that the reported result is less than the calculated method detection limit.

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

**3.1 ANALYSES****3.1.1 Hexavalent Chromium by Spectrophotometric Determination**

The hexavalent chromium analysis was performed on a direct aliquot of the sample. All requirements in the SAF and QAPP were met with one exception. The low level standard

recovery was below the required 75% at 40%. Since there was a negative instrument response for this sample, it is the laboratory's opinion that data quality was not affected.

#### 4.0 PROCEDURES

Table 1 lists the analytical procedure used for analysis of this sample.

**Table 1. Analytical Procedures.**

Analysis	Preparation Method	Analysis Procedure
Hexavalent Chromium Analysis by Spectrophotometric Determination	NA	SW846-7196A

#### 5.0 REFERENCES

ATL-MP-1011, 2009, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 9, Applied Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form F10-043; *299-E28-30 Characterization Saturated Zone-Groundwater ("M" Well)*, 2009, CH2M Hill, Plateau Remediation Company, Richland, Washington

Attachment 1

DATA SUMMARY REPORT

**WSCF - Anions & HexCr**  
**Data Summary of All Results**

**Sample Group: 20100185**

**Customer Group or SDG Number: 222S20100185**

**Customer Sample ID: B23PV2**

**Customer Sample ID: B23PV2**

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000095			18540-29-9	Hexavalent Chromium	ug/mL	98.2	<9.00E-03	<9.70E-03	n/a	n/a	n/a	n/a	9.70E-03	n/a	U

NA = Not Analyzed, ND = Not Detectec

U - < Det Limit

Attachment 2

HOLDING TIME REPORT

**Hold Time Report****SDG No.: 222S20100185**

<b>Sample Group</b>	<b>Sample</b>	<b>Matrix</b>	<b>Method</b>	<b>Prep Method</b>	<b>Sample Date</b>	<b>Received Date</b>	<b>Analysis Date</b>	<b>Missed Holding Time</b>
20100185	S10M000095	LIQUID	CHROMIUM VI	SW846-7196	02/25/10 08:30	02/25/10 10:00	02/25/10 18:30	N

Attachment 3

RECEIPT PAPERWORK



<b>ATL</b>	<b>SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST</b>		LO-090-101 Rev <u>D.D.1</u>
Date Samples Received: <u>2.25.10</u>		Group #: <u>D.D.1</u> <u>20100185</u>	
Number of Samples: <u>2</u>			
Sample Custodian: <u>ADH</u>			
<b>Sample Custodian to Complete:</b>			
Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?		✓	
Verify GKI is complete	✓		<u>on file</u>
Check that outer custody seal is intact, if present		✓	
Record cooler temperature in centigrade, as appropriate	✓		<input type="checkbox"/> Check if no cooler and/or no ice <u>13°C</u>
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		
Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)			
<b>PM to Complete:</b>			
Samples acceptable for release? <u>yes</u>		PM Initials <u>LP</u>	Date <u>2/25/2010</u>
If No, comment on communication and resolution:			
Other Comments:			

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F10-043-013		PAGE 1 OF 1	
COLLECTOR <i>Rosanne Rust</i>		COMPANY CONTACT DYEKMAN, DL		TELEPHONE NO. 373-2530		PROJECT COORDINATOR DYEKMAN, DL		PRICE CODE 1A	
SAMPLING LOCATION C7515 (299-E28-30); I-178		PROJECT DESIGNATION 299-E28-30 Characterization Saturated Zone - Groundwater ("M" Well)		SAF NO. F10-043		AIR QUALITY <input type="checkbox"/>		DATA TURNAROUND 24 Hours / 15 Days	
ICE CHEST NO.		FIELD LOGBOOK NO. <i>15 67</i> HNF-N-491-5		ACTUAL SAMPLE DEPTH <i>351.0'</i>		COA 301396ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO <del>Waste Sampling &amp; Characterization</del> <i>222-S KS 2/23/10</i>		OFFSITE PROPERTY NO.				BILL OF LADING/AIR BILL NO. N/A			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION Cool~4C						
			TYPE OF CONTAINER aG						
			NO. OF CONTAINER(S) 1						
			VOLUME 500mL						
SPECIAL HANDLING AND/OR STORAGE <i>Radioactive tie to: B23 PP9 KS 1/28/10</i>		SAMPLE ANALYSIS Chromium Hex - 7196;							
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B23PV2	WATER	<i>2-25-10</i>	<i>0830</i>	<input checked="" type="checkbox"/>					
<i>510M000095</i>									
CHAIN OF POSSESSION		SIGN/ PRINT NAMES				SPECIAL INSTRUCTIONS			
RELINQUISHED BY/REMOVED FROM <i>Larry Rosanne - Larry Rosanne</i>		DATE/TIME <i>2-25-10/ 1000</i>		RECEIVED BY/STORED IN <i>R. Stob</i>		DATE/TIME <i>2-25-10 1000</i>		<p>** The CACN for all analytical work at WSCF is 401645ES20. □ ** The 200 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □ □ ** Analytical batch QC must be run on a sample associated with this SAF.</p> <p><i>13°C</i></p> <p><i>ORIGINAL</i></p> <p><i>GAP# 222520100175</i></p> <p><i>185 OPN 2/26/10</i></p>	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
LABORATORY SECTION	RECEIVED BY			TITLE			DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD			DISPOSED BY			DATE/TIME		



## GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number NA CACN/COA NA Customer Identification Number NA

2. List generator knowledge or description of process that produced sample. Or list description of sample source:  
200 Area S&GRP Characterization and Monitoring Sampling and Analysis

MSDS Available? ☒ No ☐ Yes Hanford MSDS No. \_\_\_\_\_

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?  
*By checking "unknown" the customer understands that no knowledge is available following a careful search.*

List Federal Waste Code(s): \_\_\_\_\_ List Constituent(s): \_\_\_\_\_

P Codes: \_\_\_\_\_ ☐ Yes ☒ No ☐ Unknown  
 U Codes: \_\_\_\_\_ ☐ Yes ☒ No ☐ Unknown  
 K Codes: \_\_\_\_\_ ☐ Yes ☒ No ☐ Unknown  
 F Codes: F001 - F005 ☒ Yes ☐ No ☐ Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001: ☐ FP <100°F ☐ FP ≥100 <140°F ☐ DOT Oxidizer ☐ Yes ☒ No ☐ Unknown  
 D002: ☐ pH ≤2 ☐ pH ≥12.5 ☐ Solid Corrosive (WSC2) ☐ Yes ☒ No ☐ Unknown  
 D003: ☐ Cyanide ☐ Sulfide ☐ Water Reactive ☐ Other \_\_\_\_\_ ☐ Yes ☒ No ☐ Unknown  
 D004-D043 (Identify applicable waste codes and concentrations): \_\_\_\_\_  
 (i.e., peroxide former, explosive, air reactive)  
 N/A

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):  
 N/A

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):  
 N/A

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated) (\*State mixture rule for ignitability)

WT01: ☐ Yes ☒ No ☐ Unknown WP01: ☐ Yes ☒ No ☐ Unknown  
 WT02: ☐ Yes ☒ No ☐ Unknown WP02: ☐ Yes ☒ No ☐ Unknown  
 W001: ☐ Yes ☒ No ☐ Unknown WP03: ☐ Yes ☒ No ☐ Unknown  
 List constituents and concentrations: \_\_\_\_\_ F003:\* ☐ Yes ☒ No ☐ Unknown  
 N/A

4. Is this material TSCA regulated for PCBs? ☐ Yes ☒ No ☐ Unknown ☐ Analysis Requested

List concentration if applicable: \_\_\_\_\_

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste ☐ PCB Bulk Product Waste ☐ PCB Transformer ≥500 ppm ☐ Unknown  
☐ PCB Remediation Waste ☐ PCB R&D Waste ☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm  
☐ PCB Spill Material ☐ PCB Item ☐ Other PCB Waste (list) \_\_\_\_\_

5. Is this material TRU? ☐ Yes ☒ No ☐ Unknown

6. ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign SJ TRENT/AA JZFA Date 12/3/07

Attachment 4

ISSUE RESOLUTION FORMS

## ISSUE RESOLUTION FORM

**CHPRC TRACKING NUMBER:** 10-050

Date: 2/25/2010

SAF No. F10-043, F10-65, S10-012, W10-001, W10-002

SDG: 222S20100175, 176, 185, 186, 187, 188, 190

LOGIN No.: S10M000091-93 and 95-100

TEST: Anions, HexCr, &amp; VOA

Sample No.(s) B23CW4, B23CT9, B23PV2, B24DP5, B23D19, B23D20, B23198, B23X46

Submitted By: G. P. Ritenour

Phone No: 372-2742

Fax No.: 373-4884

Submitted To: Heidi Hampt

Phone No. 376-4319

Fax No. 373-1788

**ISSUE**

All samples were received outside of the recommended cooling temperatures of  $4\pm 2^{\circ}\text{C}$  or  $<6^{\circ}\text{C}$ . Except as noted below, samples were received in a bag or cooler without evidence of cooling (no ice or blue ice). For two samples, B24DP5 and B23PV, the sample custodian could not remember the exact packing configuration. For these samples temperature was  $13^{\circ}\text{C}$ .

**PROPOSED RESOLUTION**

Analyze and note in report narrative

**CHPRC/BHI/WMH/PNNL COMMENTS**

Accept proposed resolution. Remember to include a copy of the IRF in the report narratives.

Heidi Hampt 3/2/10

Signature and Date